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ABSTRACT

An object of the present invention is to provide a practical solid polymer electrolyte that exhibits excellent thermal characteristics, physical characteristics, and ionic conductivity, and in particular, to provide a completely solid electrolyte and a copolymer composition that functions as the substrate for producing such an electrolyte. A solid polymer electrolyte comprising an electrolyte salt, and a copolymer in which a block chain A containing a repeating unit represented by a formula (I) shown below,

$$\begin{array}{c|c}
R_1 & R_3 \\
C & C \\
R_2 & C \\
\hline
O & R_{4b} \\
O & C \\
C & C \\
R_{4a} & M
\end{array}$$

$$\begin{array}{c|c}
C & C \\
R_{4a} & M$$

a block chain B containing a repeating unit represented by a formula (II) shown below:

$$\begin{array}{c|c}
 & R_6 & R_8 \\
\hline
 & C & C \\
\hline
 & R_7 & R_9
\end{array}$$
... (III)

(wherein, R₉ represents an aryl group), and a block chain C containing a repeating unit represented by a formula (III) shown below:

$$\begin{array}{c|cccc}
 & R_{10} & R_{12} \\
\hline
 & C & C \\
\hline
 & R_{11} & R_{13}
\end{array}$$
. . . (III)

(wherein, R_{13} represents an aryl group or a heteroaryl group) are arranged in the sequence B, A, C.